



Career Pathways in Michigan Schools: A Success Story

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Executive Summary

The learning experience of Michigan students is being reshaped by Career Pathways, the central component of the state's Career Preparation initiative that increases emphasis on the application of knowledge and skills to the world beyond the classroom.

With the active support and encouragement of the Michigan Department of Career Development, Career Pathways is gaining momentum in Michigan. Although the vast majority (95 percent) of school districts intend to fully implement Career Pathways by 2004, thus far it has been implemented by only 23 percent of the districts. However, many districts have partially implemented Pathways or are running other career preparation initiatives that fit well with the Career Pathways approach. Three Michigan leaders in the adoption of Career Pathways are the Williamston Community Schools, Berrien County Intermediate School District, and the Glen Lake School District.

The framework for developing a Career Preparation System was initially provided by the Michigan Department of Education and then by the Michigan Department of Career Development. The Michigan model, which is generally followed by the three districts, progresses from Career Awareness at the elementary school level, to Career Exploration in middle school, and then to Career Preparation in High School. Thus, while improving students' academic preparation, schools gradually increase the students' exposure to the world of work, focus their career interests, and increase their career and employability skills.

Each of the three districts realized early on that the Career Preparation/Pathways approach could not succeed without enthusiastic teacher support and intensive professional development. Each district has very active staff development programs to support Career Pathways. Like many districts throughout Michigan, they obtained funds for professional and curriculum development from the state's Career Preparation program, which began in 1998.

The Career Pathways approach is having a positive impact on students in a variety of ways. Students have better attendance, choose more challenging courses, have higher grade point averages, enroll more often in career-technical education, and attend colleges in greater numbers. In addition, graduation rates are higher, and disciplinary referrals are down when career contextual classes are compared to traditional ones. Overall, the data show that the Career Preparation System is helping young people think systematically about their futures and the education that is necessary to achieve their occupational and lifetime goals. Career Pathways students have a better sense of their career direction and feel more certain about what they want to do in the future.

Introduction

Career Pathways is the fastest-growing curriculum innovation in Michigan secondary schools. This is an account of how three exemplary school districts organize classroom learning to ensure that students are prepared for work or college while helping them make informed decisions about their futures. In these districts—Williamston Community Schools, Berrien County Intermediate School District, and Glen Lake School District—teachers design curricula and incorporate real life experiences into lessons that help students learn about careers and apply academics to address work-related challenges.

This document provides a summary of the three approaches, focusing on the following:

- Curricular approaches in the three districts, similarities and differences;
- Impact of Career Pathways on student achievement and behavior;
- Impact on the satisfaction of key stakeholders;
- Current efforts to build capacity and institutionalize Pathways in the schools.

Preceding this discussion is a brief description of Career Pathways and the extent of its implementation in Michigan, using a study of almost 100 districts that responded to a survey conducted on behalf of the Michigan Department of Career Development by a graduate class of the Michigan State University School of Public Policy and Administration.

Michigan's Career Preparation System

Career Preparation is a system designed to give all students a jump-start on their futures by providing them with opportunities to explore a variety of careers throughout their K-12 education. Aided by \$23 million in state funds for “system building,” K-12 school districts support several career development initiatives including integrated academic and technical curricula, career planning activities, and comprehensive career guidance programs.

What Is Career Pathways?

Career Pathways has grown out of the widespread belief that our educational system does not fully prepare students for the world outside of school and that schools should incorporate workplace competencies into curricula at all levels—elementary, secondary, and postsecondary. This concept has been adopted by states throughout the country, although the implementation and the components of each program vary.

Career Pathways is a key strategy in the implementation of Michigan's Career Preparation System. The approach helps students by engaging them in opportunities to identify, assess, and prepare for their career goals. The Pathways, which are also defined as career clusters or majors, are broad-based groupings of careers that share similar characteristics and whose employment requirements call for many common interests, strengths, and competencies. Thus, Pathways help students make meaningful connections to six broad industry sectors that are reflective of the current and emerging world of work. Through their incorporation into the curriculum, Pathways help students examine their interests and learn through direct experience how school subjects relate to work. It is believed that this approach will help students select a career that suits them while acquiring the skills to help them succeed and prepare for lifelong learning.

In Michigan, Career Pathways is implemented with six basic groups and is flexible, allowing individual school districts to design their own program. The six Career Pathways are:

- ◆ ***Arts and Communication***: careers related to the humanities and the performing, visual, literary, and media arts.
- ◆ ***Business, Management, Marketing, and Technology***: careers related to all aspects of business including accounting, business administration, finance, information processing and marketing.
- ◆ ***Engineering/Manufacturing and Industrial Technology***: careers related to technologies necessary to design, develop, install, or maintain physical systems.
- ◆ ***Health Services***: careers related to the promotion of health as well as the treatment of injuries, conditions, and disease.
- ◆ ***Human Services***: includes careers in childcare, civil service, education, hospitality, and the social services.

- ◆ ***Natural Resources and Agriscience***: careers related to natural resources, agriculture, and the environment.

The six-pathway system serves as a guide for schools. The state does not require schools to have all six pathways, and it permits schools to incorporate locally relevant content into a Pathway area. However, the state does require local schools to integrate into all Career Pathways course offerings, state standards, or benchmarks from the Michigan Curriculum Frameworks. This integration and articulation of the curricula links the elementary, middle, and high schools in their career preparation focus, and ensures that students select coursework that is meaningful, rigorous, and appropriate to their interests and academic level.

Extent And Nature Of Implementation In Michigan

Although the vast majority (95 percent) of Michigan school districts intend to implement Career Pathways by 2004, through FY 2002 these have been implemented by only 23 percent of the districts.¹ However, many districts that have not fully implemented Pathways are running other career preparation initiatives that fit well with the Career Pathways approach.

Although Michigan school districts have flexibility within a set of state guidelines for Career Pathways, they appear to have coalesced around a general model of implementation, with considerable variability within the general model. More than four-fifths of the districts use or intend to use all six Pathways. The majority of school districts include the following components:

- Educational Development Plans (EDPs)
- Internships
- Career classes
- Visits to businesses
- Job shadowing
- Final presentation
- Graduation requirement
- Portfolios
- Teacher externships

The previously mentioned study of 100 districts showed that Career Pathways catalyzed growth in the use of all of these components, particularly EDPs that increased from 35 percent to 80 percent.

The study also documented that school curricula throughout Michigan are changing as a result of Career Pathways. Over 60 percent of responding school districts report their curriculum is changing, with half saying the change was due to the addition of courses or electives and 40 percent reporting the integration of Career Pathways into existing curricula.

¹ Career Pathways “implementers” are those eligible agencies that implement half or more of six benchmarks determined by MDCD’s Office of Career and Technical Preparation. In FY 2002 154 of 674 eligible agencies (548 traditional school districts and 126 charter schools) implemented enough Career Pathways benchmarks to be designated as “implementers.”

Almost 60 percent indicated they had integrated technical and academic curricula as part of their implementation of Career Pathways.

The introduction of Career Pathways in a school appears to change the nature of work-based learning as well. Among the 17 respondent districts identified by MDCD as Career Pathways implementers in FY 2001 (out of 73 eligible agencies in this category), half believe work-based learning had changed as a result of Career Pathways, compared to a quarter of the respondent schools that were not in this MDCD-designated group.

The study also showed that while few districts have reorganized staff as a result of Career Pathways, the initiative is having a major impact on school scheduling practices. Forty-four percent of the 92 districts responding to this question indicated their high schools used block scheduling, while 20 percent of 81 districts responded that their middle schools did. Almost one-third of schools reported that as a result of Career Pathways they had changed their schedule or length of class session, school day, or school year. Of the schools that made a change, 70 percent changed to a block-type schedule.²

Three Exemplary Approaches

Three Michigan leaders in the adoption of Career Pathways are the Williamston Community Schools, Berrien County Intermediate School District, and the Glen Lake School District.³

The Berrien County Intermediate School District is an educational service agency serving 29,000 students in Berrien County, Michigan. The county includes 16 public school districts, 30 private schools, and two public school academies. All 14 of the districts with a high school work with the Berrien County Intermediate School District to implement the Career Preparation System.

While Williamston and Glen Lake are K-12 districts, Berrien's ISD is working with all 14 districts in the county to implement Pathways. Pathways have been evolving in a different manner in each community, responding to different constituencies with different perceptions of the problem to be addressed.

Perception of the Challenge

Converting the high-school curriculum with traditional teaching methods to a career-contextual, problem-based delivery is the vehicle by which the three districts are helping students become

¹ "Implementation and Impact of Career Pathways in Michigan" study prepared for the Michigan Department of Career Development by Michigan State University graduate class in the School of Public Policy and Administration, August 2002, page 25.

² The Berrien County Intermediate School District is an educational service agency serving 29,000 students in Berrien County, Michigan. The county includes 16 public school districts, 30 private schools, and two public school academies. All 14 of the districts with a high school work with the Berrien County Intermediate School District to implement the Career Preparation System.

Glen Lake Community Schools serve the four small towns of Cedar, Empire, Glen Arbor, and Maple City. The school district covers 200 square miles and enrolls 950 students in one elementary school and one 6-12 middle/high school. Sleeping Bear Dunes National Lakeshore encompasses the north and westerly boundaries of the school district and attracts one million visitors a year. Three institutions provide career preparation opportunities for students: the middle/high school, the Traverse Bay Area Career-Technical Center, and Northwestern Michigan College.

The Williamston School District is located ten miles east of Michigan State University. The district covers 75 square miles. The school district enrolls approximately 2,000 students in one high school (grades 9-12), one middle school, and two elementary schools.

strategic learners. The three districts have more in common than differences in their approach, but there are subtle differences.

In **Williamston**, the focus has been to align school improvement efforts with the Michigan Curriculum Framework, which includes student standards regarding academic content, technology, and career and employability skills, as well as standards for school staff regarding instruction and assessment. While teaching methods are becoming more applied and hands-on, alignment of content with the state academic standards remains a key area of emphasis.

While the fourteen K-12 school districts within **Berrien County** also align curricula with instruction in a standards-based program of study, the focus has been to use components of the Michigan Career Preparation Model to meet employer expectations for well-prepared employees who possess a variety of technical, teamwork, and problem-solving abilities. A major consequence of this approach is that attendance in career-technical programs has mushroomed along with a higher rate of college attendance among high school graduates.

The **Glen Lake** Secondary School has used a marketing approach to expand choices and ensure that curricula reflect what students and parents want as a result of increased career awareness and knowledge of student abilities and interests. As a result of this demand-driven approach, the high school and the Traverse Bay Area Career-Technical Center have added new career-technical electives and dropped others that had low enrollments.

Curricular Approaches

The framework for developing a Career Preparation System was initially provided by the Michigan Department of Education and then by the Michigan Department of Career Development. The Michigan model, which is generally followed by the three districts, progresses from Career Awareness in elementary school to Career Exploration in middle school to Career Preparation in High School. Thus, while improving students' academic preparation, schools gradually increase their exposure to the world of work, steadily focus their career interests, and increase their career and employability skills (see Figure 1⁴).

Within the Michigan framework, each district follows an approach that fits with the local character of the community. Following are key features of the curricular approach in each district.

Williamston Community Schools. The district has a Director of Assessment and Articulation and one curriculum coach each at the middle school and high school who facilitate and coordinate the integration of career contextual learning and career preparation. The superintendent, the Director of Assessment and Articulation, principals, and coaches communicate frequently.

Williamston has reorganized and combined traditional classes in order to meet learning objectives. For example, the traditional one-semester, ninth-grade social studies and geograph classes have been

⁴ Dr. Barry Stern, the author of this report, used materials provided by MDCD and the three districts profiled here to develop this representation of the Michigan Career Preparation model.

combined into a year-long global studies class with a team teaching approach. This type of career-contextual, problem-based curriculum still addresses the Michigan Curriculum Frameworks. While it does not change course content, it does change how information is presented and the strategies for helping students learn.

Whether it is a problem-based project encompassing several subject areas such as social studies, math, and science or a problem-based project within a unit of a specific subject such as language arts, Williamston employs the same basic template. This template provides the project title; the overarching goals for the project/unit; how student mastery will be measured; and the State of Michigan Frameworks which will be addressed for each subject area, including content standards, technology standards, and career and employability skill standards. The template also requires the determination of which Career Pathways the project will address and which pillars of technology integration (communication, collaboration, publication, and investigation) will be used.

Service learning is incorporated into most problem-based projects. For example, a 4th-5th grade project to put on a musical includes career and employability standards of personal management and teamwork, individual and team tasks, and performances by different casts. However, it also includes the formation of a Community Giving Committee of students and parents to decide on donations of proceeds to selected benefactors.

A 10th grade problem-solving project uses a unit in literature to relate issues developed by the author to how these might impact a contemporary community or person. Students listen to guest speakers from different Career Pathways and do research on a real local problem using a prescribed process that includes the following steps: identify the problem, come up with a solution, implement the solution, evaluate the solution, and present your work. Teachers grade students on teamwork, completing each step of the process, coming up with a realistic and achievable solution, and the actual visually aided presentation itself.

Other examples that illustrate the nature of the district's efforts in this area include:

- Sixth graders participate in a True Skills class to begin to explore careers, their strengths, and interests. They also work on an instructional garden project.
- Seventh graders study the water quality of the Red Cedar River. They also participate in "Reading in the Garden/Literacy Circles," which involves reading books to elementary students in the school garden.
- Eighth graders study a non-profit organization, do volunteer work, and report on what they learned. They also are given the ACT Explorer test, which identifies their aptitudes and interests.
- Eleventh graders participate in job shadowing and also revisit the Educational Development Plan (EDP) in their English Language Arts class.
- Twelfth graders participate in a senior exit project where they demonstrate achievement of the district's learner outcomes such as being a responsible citizen, quality producer, self-directed learner, etc.

No matter what the problem-based project, key academic concepts are always incorporated. Teachers and administrators operate from the premise that students need to acquire not only informational knowledge, but also the skills to put that knowledge to use in their lives. All subject areas must address the Michigan Curriculum Frameworks and Content Standards. However, an integrated contextual approach that aligns with the standards and principles of learning responds to students' desire to be in the company of adults who are doing adult work.

Berrien County Intermediate School District (BCISD). Over the past five years, the BCISD has assisted local school districts in developing or enhancing the implementation of Career Pathways and other components of the Career Preparation System. The County's coordinated systems approach attempts to integrate programs and services, which address the needs of students to be lifelong learners and successfully fill roles as capable individuals in schooling and/or a career of their choice. There are many strands to the integrated Career Pathways curriculum that are currently in place in the K-12 schools. Some are listed below:

- Comprehensive Guidance and Counseling,
- Career Assessment Activities,
- Four-year Educational Development Plans,
- Workplace Readiness Training,
- Career Technical Education learning opportunities,
- Work-based learning experiences,
- Job-shadowing,
- Portfolio development, and
- Service learning projects.

These components and/or strands are also evident in the Glen Lake Community Schools and the Williamston Community Schools. Williamston, however, focuses more on applied academics, giving somewhat less emphasis to career-technical education learning opportunities.

Glen Lake Community Schools. Glen Lake was one of the first small or rural districts in Michigan to incorporate Career Preparation principles into its curriculum. In fact, its work in this area preceded state efforts, and many small districts are modeling Glen Lake's approach as an efficient way to get started. The district's approach is founded on six basic principles:

- 1. Common Language:** Career Pathways provides a common language to ensure that students, staff, and parents are "on the same page" and understand the school's career preparation strategies.
- 2. Grassroots Staff-Driven Approach:** Curriculum changes and other aspects of the program that affect the classroom are generated by staff members.
- 3. Level Playing Field:** The pathway program presents career preparation opportunities and the academic curriculum equally to **all** students. Once students complete pathway "focus activities," they are free to work with their parents and guidance counselor to make curricular and school-to-career plans that they think are attainable.
- 4. Promote Curriculum & Opportunities:** The curriculum guides, Career Pathway Days, School-to-Career Opportunities Day and field trips are excellent promotional vehicles.

5. **Provide a Focus:** Interest and aptitude assessments, portfolios, and curriculum guides help students choose a Pathway, and plan for and reach their educational goals (**Note: Students can change this choice at any time.**)
6. **Make Postsecondary Connections:** Pathways can help students connect their high school work with their postsecondary plans.

The Glen Lake approach begins with four self-scoring interest and aptitude tests that students take in the 8th grade. The student and counselor work together to discern a profile or pattern among these assessments, and students and parents connect these assessments to Career Pathway choices. These choices, in turn, create a demand voiced by students for electives that will help them pursue a career in their chosen Pathway. Following are examples of curriculum changes and developments in the first 30 months after implementation.

- Graduation credit requirements increased
- Unpaid trainee internships started
- Drafting class enrollment quadrupled
- Virtual learning lab (classroom for Internet courses)
- K–12 career education curriculum developed
- Elementary school career resource center
- New courses added to the curriculum:
 - Advanced Health & Fitness
 - Design Engineering I & II
 - Business Principles Class
 - AP English 12
 - AP Spanish
 - Applied Language I
 - Communication Arts—Theatre
 - Communication Arts—Broadcasting
 - Advanced Communication Arts—Theatre
 - Advanced Communication Arts—Broadcasting
 - Economics/Civics
 - 2-Dimensional Art
 - 3-Dimensional Art
- Dune Grass Project (partnership with National Park Service)
- Port Oneida Historical District Drafting Project (partnership with National Park Service)
- Community-Based Learning Program—special education
(partnership with Homestead Resort)
- College/Postsecondary Preparatory Plan revision
- “Girls in Technology Lab” exploratory (middle school)
- Career Pathways banners display
- Career Preparation display case
- STC Opportunities Day

These changes were accomplished by redirecting school resources and without an increase in staff. Additionally, the increasing interest in careers has increased student participation in the Traverse Bay Area Career-Tech Center, where they go for half a day. In fact, Glen Lake High School has the highest per capita participation among high schools that are served by the center.

Building Capacity

All three districts realized early on that the Career Preparation/Pathways approach could not succeed without enthusiastic teacher support and intensive professional development. Like many districts throughout Michigan, they obtained funds for professional and curriculum development from the state's Career Preparation program, which began in 1998. The Michigan Department of Career Development (MDCD) has administered this program since 2000. (The Governor created the department in 1999.) To bring more focus to this \$23-million-per-year program, MDCD has been requiring districts that receive these funds to implement Career Pathways and Educational Development Plans as key components of their Career Preparation system. Additionally, in 2001 and 2002 MDCD provided Career Pathway grants to several dozen school districts, using \$5 million of tobacco settlement funds.

Each of these exemplary districts has very active staff development programs to support Career Pathways. Of the three, the most documented is the comprehensive Williamston Community Schools' program described below.

Career Connections at the Williamston Community Schools evolved over eight years in a gradual yet purposeful manner. With the leadership of the superintendent and school board, four elements were evident during the development of their version of Career Pathways (which they call Career Connections): (1) professional development, (2) site-based management, (3) a career focus for applied academics, and (4) alignment of Williamston curricula with the Michigan Curriculum Framework content standards and teaching and learning standards. Additionally, the district was laying a foundation to ensure that teachers taught the district curriculum, and that student assessments used by the district measured the achievement of what teachers were supposed to teach. These elements were incorporated into goal statements of the school board and continually communicated to various stakeholder groups through newsletters and board publicity materials. Figure 2 indicates how Career Connections and the state framework both support the district's goals.

Since 2000, the Williamston Community Schools has obtained state Career Preparation funds through the Capital Area Career Connections Advisory Board (name given to their Education Advisory Group),⁵ which has designated these funds to support the development and implementation of Career Pathways in districts in Ingham, Eaton and Clinton counties. The initial focus of

⁵The term "Career Connections" is used two different ways in this document. It is the label used by the Williamston Community Schools to describe its initiative to connect "real life" authentic experiences to academic learning. Career Connections is also the name given to the Capital Area Education Advisory Group (EAG) that proposes and carries out educational strategies for the region. In the tri-county region, Career Connections (or the EAG) consists of local elected officials and school, college, business, and labor executives who are appointed by the Capital Area Workforce Development Board.

Career Connections was to ensure that the career preparation philosophy would have a wide impact on school practices in the tri-county region. In addition, the board wanted to implement career preparation activities that would not disappear if the funding stream were no longer available.

In 2001, the Career Connections Advisory Board awarded from its state Career Preparation funds “Lighthouse” grants to one school district in each of the counties. Each district was selected to help develop and implement the most appropriate career initiatives and then serve as models to other districts. Williamston Community Schools was one of the three districts designated as a Career Pathways Lighthouse District and was recognized at a dinner in April 2002 for its leadership in fostering the four major components of the Career Connections effort in the tri-county region:

- Career contextual learning
- Educational Development Plans (EDPs)
- Career Pathways organization of high school course offerings
- Comprehensive guidance and counseling.

The Lighthouse award, as well as other grants over the years,⁶ have been used to help develop key components of the Williamston model:

- Professional development to help teachers develop and deliver curriculum models that connect student learning to the world beyond the classroom and establish a purpose for why students are involved in these learning activities; additionally, the district provides in-service training to align instruction with the Michigan Curriculum Frameworks, to incorporate technology education standards into the curriculum, and to employ action research methods to determine the relative effectiveness of different components of the curriculum.
- Curriculum coaches that work directly with teachers in their schools to build daily lessons that incorporate career-contextual, applied, and hands-on teaching methods.
- Externship opportunities that enable teachers to spend a few days visiting a business in order to discover real-world applications of school subjects. To date, 60 percent of the K–12 teaching staff has participated in externships.
- Comprehensive guidance and counseling program with specific responsibilities and learning objectives assigned to teachers as well as counselors at each educational level (elementary, middle, and high school).

Another part of the Williamston model is to offer technical assistance and training to other districts. By building the capacity of staff in other districts, Williamston staff improves their own. Moreover, these external services generate revenue that not only covers costs but also helps fund continuing staff development within the Williamston district. Revenues from external training are also used to purchase classroom supplies for those schools or departments that contribute external trainers. The superintendent’s commitment to external training stems from his belief that “you can learn without

⁶ In addition to state Career Preparation funds, two of the major funding sources for professional development include the Technology Literacy Challenge Fund of the Michigan Department of Education (MDE) and the Making Connections project sponsored by DaimlerChrysler, first administered by MDE and then from 2000-2002 by the Michigan Department of Career Development.

teaching, but it is impossible to teach without learning.” Thus, Williamston Community Schools’ strategy for becoming a learning organization is continually improving its own instruction while building capacity in other districts.

Impact Of Career Pathways On Student Achievement And Behavior

Does Career Connections make a difference? It appears that it does. However, developing definitive data on the impact of Career Pathways can be difficult because it is nearly impossible to isolate all of the factors potentially influencing student outcomes and conduct. Nevertheless, staff in the three exemplary districts continues to report that Career Pathways are obtaining positive results for students. Teachers using the problem-based curriculum report that students are more engaged and there are fewer incidences of student misconduct. Here are two examples:

- J.D. is an “at-risk” student, expelled during 1998-99 and readmitted in 1999-00. An educational plan (an EDP) was developed for J.D. in the Human Services pathway. His specific focus was teaching. A mentoring opportunity was provided to J.D. through the district’s alternative education program. He recently graduated with plans to pursue a teaching career.
- D.R. is an average student who early on exhibited little interest in school. The project- and problem-based math, however, sparked an interest causing him to select the Engineering/ Manufacturing career pathway. His renewed interest in school spread to language arts and social studies where problem-based lessons had replaced traditional methods of learning and teaching, and he was able to apply his math interest to these subjects.

In addition to anecdotal evidence, staff needed scientifically definitive data to ascertain whether the school population as a whole is benefiting from the career-related approach. Both the Williamston schools and the Berrien County ISD independently decided to look at a wide range of data covering the school years from 1997-98 to 2001-02. It was during this period that the most significant change was occurring in their implementation of Career Pathways.

While the Williamston and Berrien studies use somewhat different indicators, the two together present a favorable evaluation of Career Pathways. Performance indicators demonstrate that students have better attendance, take courses that are more difficult, have higher grade point averages, have higher MEAP scores, and attend colleges in greater numbers. Overall, the data show that the Career Preparation System is helping young people think systematically about their futures and what is necessary to be able to achieve their occupational or other goals. Career Pathways students have a better sense of their career direction and feel more certain about what they want to do in the future. Participants are more motivated academically because their experiences help them see the practical relevance of their class work.

Figure 3 summarizes the data on student outcomes that the Williamston Community Schools and Berrien County Intermediate School District have provided to MDCD for this monograph.

Student Achievement

To assess whether the implementation of Career Pathways is associated with student achievement, this paper presents trend data on grade-point averages (GPAs) for the Williamston Community Schools and Berrien County schools. In addition, the paper presents average test scores of the graduating classes 2000-2002 on the Michigan Educational Assessment Program (MEAP). MEAP scores are presented for all three entities examined in this study, including Williamston, Berrien County, and Glen Lake.

Grade-point Averages. Student achievement as expressed by grade point averages is improving in the Williamston Community Schools, particularly among students in problem-based math classes. Grade point averages for ninth graders show a slight increase from 2.91 to 3.04 when comparing the 1999-00 and 2001-02 school years. (See Figure 4.)

A more pronounced impact emerges when comparing the grade point averages of Williamston students in the problem-based and traditional applied math classes. During the 2000-01 school year, most applied math classes were taught using traditional methods. Many of these classes switched to the problem-based approach during the 2001-02 school year. The difference in grade point average between the two years is large, with the average rising from 1.5 to 2.55 or more than a full grade point. (See Figure 5.)

A similar pattern appears in Berrien County, where trend and pattern data support a county-wide increase in the mean grade point average for all high school students in grades 9, 10, 11 and 12 in the years 1997-2001.⁷

MEAP Scores. Michigan's primary way of assessing student achievement is the Michigan Educational Assessment Program (MEAP). At the high school level, generally in the 11th grade, students take a battery of five assessments: Math, Reading, Science, Social Studies and Writing. Some students take the battery in the 10th grade in order to qualify for dual enrollment in postsecondary institutions, and others test or retest in the 12th grade in order to qualify for the \$2,500 Merit Award scholarship. A graduating class score may be obtained that includes the best scores obtained by the students in a particular class. Following are tables showing the scores of the graduating classes for 2000, 2001, and 2002.

Thus far, Career Pathways has had negligible impact on the passing rates of students taking the MEAP tests. This is true for both the Williamston and Glen Lake school districts, and for the fourteen districts in Berrien County, where the Intermediate School District leads efforts to implement Career Pathways. However, inasmuch as the state is continually adjusting the rules concerning these high stakes tests, as well as the content of the tests themselves, it may be too soon to have confidence in the meaning of MEAP trend data.⁸ (See Figures 6–8.)

⁷ Berrien County Intermediate School District Report on Career Pathways, a publication of Lakehouse Evaluation, June 2001.

⁸ For example, whereas several districts had excluded many students from requirements to take these tests, the state in 2001 began requiring schools to test at least 95% of their students, and to test special education students in math and science. Thus, passing rates in some districts could be lower in 2001 due to the inclusion of students with lesser academic abilities. This did not appear to be the case with the districts profiled in this monograph, except for 1-2 districts of the 14 districts in Berrien County.

Graduation Rates

The high school completion rate of students in the Williamston Community Schools has significantly improved over a four-year period. Whereas 94.7 percent of ninth graders in the class of 1997-98 graduated in four years, the graduation rate of the 2001-02 class increased to 99 percent. (See Figure 9.)

Attendance Rates

Attendance rates are higher in problem-based, or contextual learning, classes. In 1999-2000 Williamston average daily attendance for classes taught using traditional methods was 89 percent. After implementing problem-based teaching, average daily attendance rose to a significantly high 96 percent for students in these classes (the 2001-02 school year). (See Figure 10.)

The overall high school attendance rate also has grown steadily in the 14 districts in Berrien County as seen by the following figure.⁹ (See Figure 11.)

High School Graduation Requirements and Enrollment in 3rd Year Academic Courses

Overall high school graduation requirements for Berrien County have risen 15 percent to a mean of 26.5 in 2001 versus a mean of 23.1 in 1997. Additionally, the number of students enrolled in a 3rd year content course (i.e. Math, Science, Social Studies and Language Arts) has substantially increased for all schools participating in Career Pathways for the reporting years 1997-2001. (See Figure 12.) The county has also seen a marked increase in the number of Advancement Placement (AP) course offerings available to high school students. Although the relationship between course taking and participation in Career Pathways is not necessarily causal, there is a strong relationship nonetheless.

Participation in Career-Technical Education and Applied Learning

As suggested by the figures below, in Berrien County participation in career-technical education courses increased over 500 percent from 895 students in 1997 to 5,554 students in 2001. There were also increases in applied learning experiences associated with the Career Pathways, indicating that Pathways integrate job readiness skills (e.g. making decisions, solving problems, working as a team) into the regular curriculum. Such work-based learning experiences provide students opportunities to relate to adults, to practice accepted social expectations and appropriate behaviors in a professional environment, and to communicate with adult co-workers.¹⁰ (See Figure 13.)

Dual Enrollment and Articulation with Postsecondary Programs

There is an increased and renewed connection between the Berrien County high schools and the post-secondary system of instruction and certification. In fact, this articulation reflects a national

⁹ *Ibid.*

¹⁰ *Ibid.*

trend resulting in most young people broadening their career options to include postsecondary programs of study, such as: junior colleges; post high school certificate programs, and four-year colleges. Data from the county shows a marked increase in the number of high school students receiving college credits through dual enrollment and articulation programs. Figure 14 illustrates this increase.

In 1997, only 62 high school students were enrolled in college-level courses, while 299 high school students earned college credits in 2001. This 270 percent increase in enrollment reflects the vigor and vitality of the renewed connection between postsecondary institutions and the Berrien County schools.

Graduates Attending Postsecondary Institutions

In Berrien County, Career Pathways curricula have significantly impacted the number of high school graduates attending a postsecondary program of instruction for additional training, certification, and degrees. In 1997, 61 percent of high school seniors enrolled in postsecondary education after high school graduation, while 68.7 percent of seniors enrolled in programs after graduation in 2000. (See Figure 15.)

Disciplinary Incidence Rates

Student disciplinary referrals are down sharply in Williamston Community Schools when contrasting students in traditional classes and those in problem-based courses. In classes targeted for a switch to problem-based teaching, student referrals were 5.39 per 100 students during the 1999-00. After the change in curriculum, referrals dropped by more than three percentage points to 2.25 percent. (See Figure 16.)

Student Ratings of High School Experiences

A senior exit survey of the class of 2002 showed that students generally enjoyed their Williamston High School (WHS) experience and felt prepared for their future beyond high school. The overwhelming majority of seniors (88 percent) plan to attend college immediately after high school and have a specific career plan (71 percent). They felt the high school provided a challenging curriculum (78 percent) and that while at WHS, they applied something learned in school to real-world problems outside of school (75 percent). Three-fourths of the seniors took pride in the fact that they had produced a product that reflected originality, high standards, and the use of advanced technologies.

The great majority of seniors were comfortable in their abilities to influence others and to work with others from different cultures. They had positive academic and social experiences (74 percent) and had confidence in their abilities to take the steps needed to achieve their future goals (84 percent). They had good personal relationships with faculty and staff (82 percent), with 40 percent indicating that either a teacher or counselor helped them the most in making post-high school decisions. Figure 17 summarizes the responses from this exit survey.

Conclusions

In all three exemplary Career Pathway districts, factors related to progress achieved through curriculum integration and career contextual learning include a clear focus and purposeful planning, commitment by teachers, administrative support, professional development, effective and frequent communication among staff and administrators, sufficient resources, and time for teachers to collaborate and reflect on practices and plans. Additionally, teachers generally feel that they are part of the process and thus strive to continually improve their practices.

All of this hard work toward a common goal is paying off in terms of improved student outcomes. Students are achieving higher grades, have improved attendance, graduate more often, enroll in more difficult high school courses and in college courses while still in high school, participate more in career-technical education, and enroll in college after graduation. There are also fewer disciplinary incidents among students, and they express greater confidence in their future.

Career Pathways In Michigan Schools

Appendix: Figures 1–17

Figure 1:

**K-12 Career Preparation Process
Prepare Students for Success at the Next Level**

Career Prep Progression

Elementary School (Grades 1–5): Career Awareness

- Guest speakers from workplace, workplace tours, field projects.
- Integration of career themes into basic subjects.
- School-based micro-enterprises.

Middle School (Grades 6–8): Career Exploration

- Grade 8: EDP + assessments of career aptitudes & interests.
- Visits to workplaces and colleges, career fairs, mentors, job shadowing.
- Technology education: “hands-on” modules in different technological areas to aid career pathway selection and understanding of key technological concepts.
- Junior Achievement, school-based micro-enterprises.

High School (Grades 9–12): Career Preparation

- Options for integrating academic with technical preparation: applied academics (e.g., applied physics), tech prep that aligns secondary with community college preparation, career-technical education courses, cooperative education, career academies, school-to-registered apprenticeship, and dual enrollment.
- Career Pathways + Educational/Career Development Plans (EDPs).
- Career & employability skills: work habits, interpersonal skills, portfolios/resumes.
- Career aptitude tests and interest inventories, career information system (MOIS).
- Visits to workplaces, career fairs, mentors, job shadowing.
- Paid/unpaid work experience, school-based enterprises (e.g., bookstore, snack shop).

Career Contextual Teaching/Learning

- Hands-on instructional units and activities.
- Project-based learning.
- Service learning.

Comprehensive Guidance & Counseling

- Guidance Curriculum.
- Individual Planning.
- On-Demand Services.
- Instructional Support.

Technology Education

- Technological concepts introduced and integrated into academic subject area curricula for technological literacy.

***Career Connections* Addresses the Michigan Curriculum Frameworks, Standards and the School Improvement Plan**

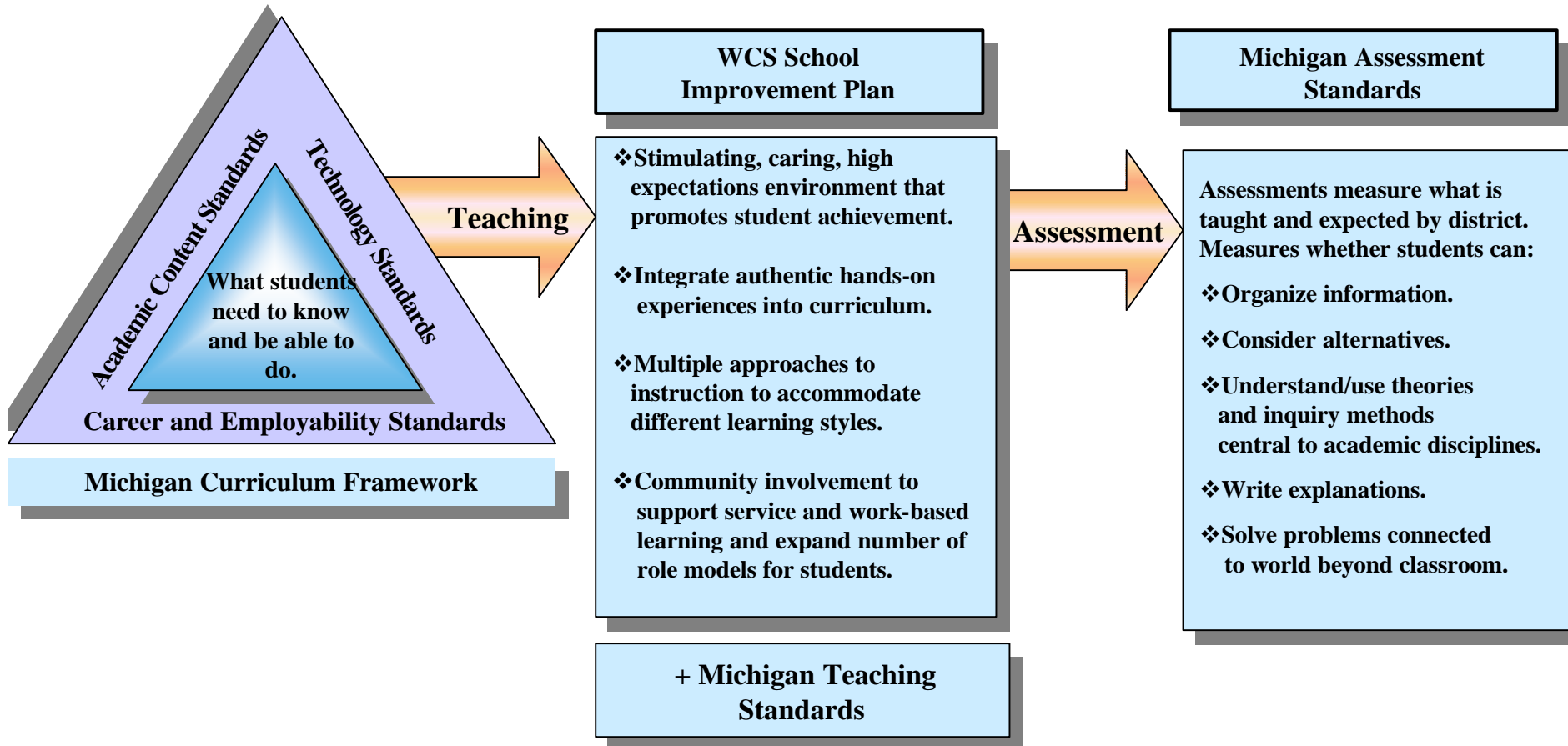


Figure 3:

Outcome Measure	Williamston Community Schools	Berrien County Intermediate School District
Student Achievement Grade-point Average (GPA) MEAP Passing Rate	Yes Obtained from CEPI	Yes Obtained from CEPI
Graduation Rate	Yes	No
Attendance Rate	Yes	Yes
High School Graduation Requirements and Enrollment in 3 rd Year Academic Courses	No	Yes
Participation in Career-Technical Education and Applied Learning	No	Yes
Dual Enrollment and Articulation with Postsecondary Programs	No	Yes
Graduates Attending Postsecondary Institutions	No	Yes
Disciplinary Incidence Rates	Yes	No
Student Ratings of High School Experiences	Yes	No

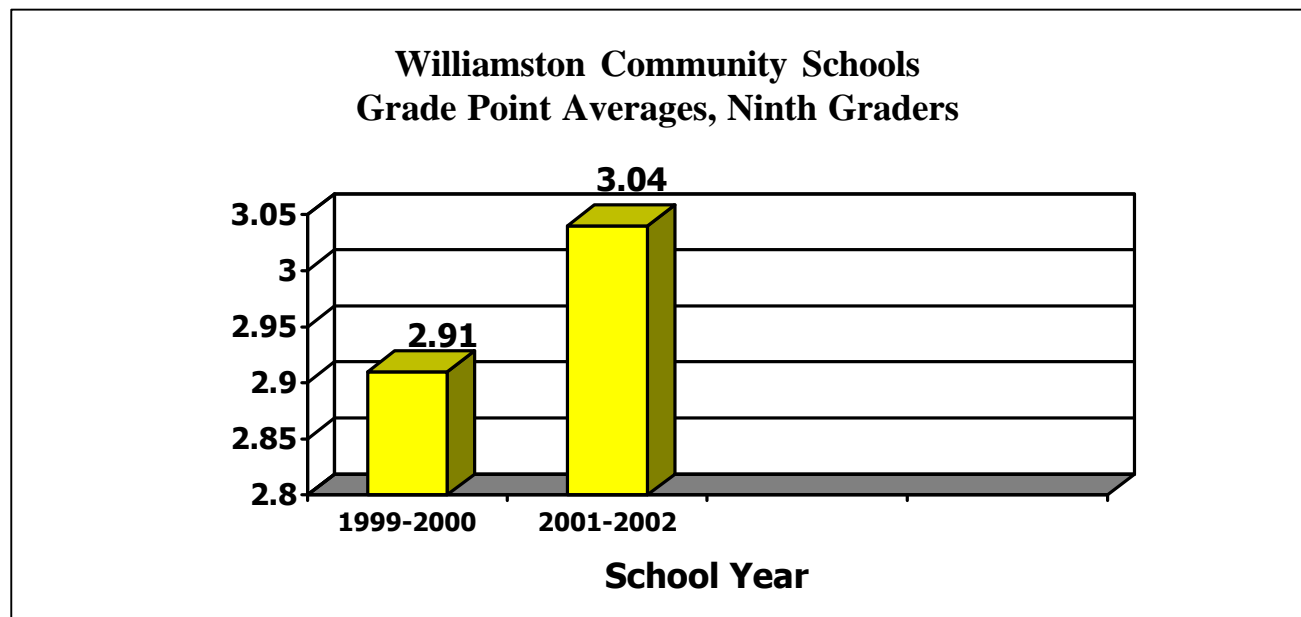
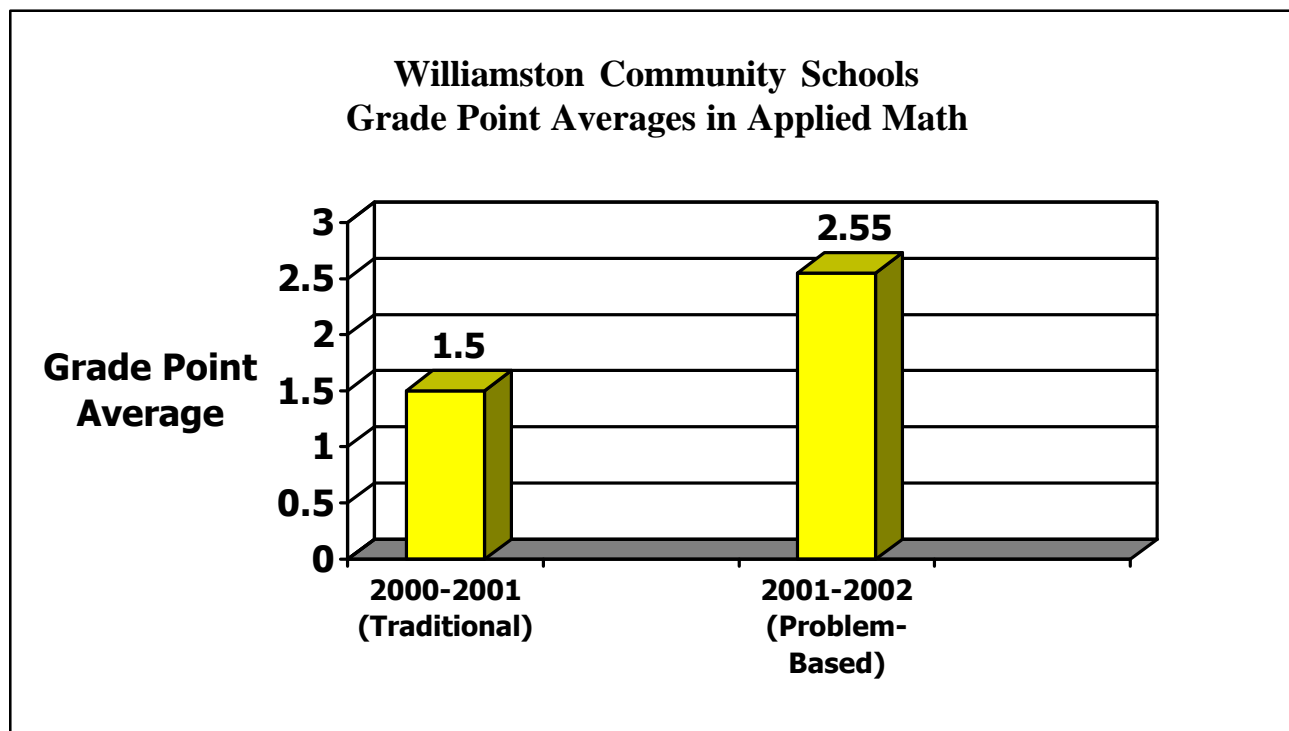
Figure 4:

Figure 5:**Figure 6:**

**Percent of Graduating Classes with MEAP Passing Scores
in Williamston Community Schools**

Subject	Class of 2000	Class of 2001	Class of 2002
Math	80.3	88.9	78.5
Reading	81.6	90.3	77.9
Science	69.3	75.0	69.4
Writing	76.5	88.2	76.3

Figure 7:

**Percent of Graduating Classes with MEAP Passing Scores in
Glen Lake Community Schools**

Subject	Class of 2000	Class of 2001	Class of 2002
Math	82.9	70.4	71.3
Reading	88.6	73.2	86.3
Science	80.0	71.8	75.3
Writing	72.9	71.8	79.2

Figure 8:

**Percent of Graduating Classes with MEAP Passing Scores
in Berrien County***

Subject	2000	2001	2002
Math	64.6	64.7	63.8
Reading	69.8	69.9	69.3
Science	55.6	56.0	57.3
Writing	58.0	63.0	65.2

** These are average pass rates for the fourteen districts in Berrien County. For 2000 and 2002 the county rates were calculated from raw scores from each district; the data were obtained from the Department of the Treasury's website for the Merit Award and MEAP. For the Class of 2001, the county score was obtained from the Standard and Poors' School Evaluation Services for Michigan.*

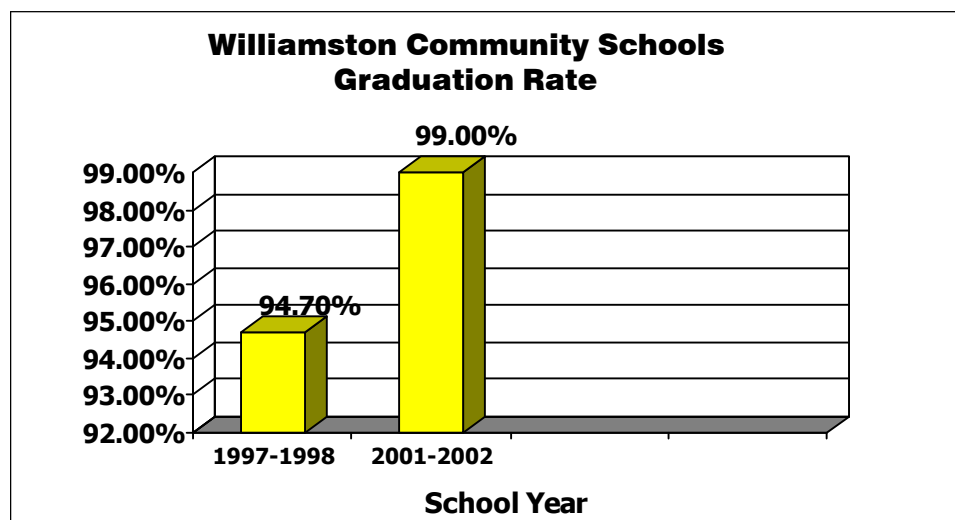
Figure 9:

Figure 10:

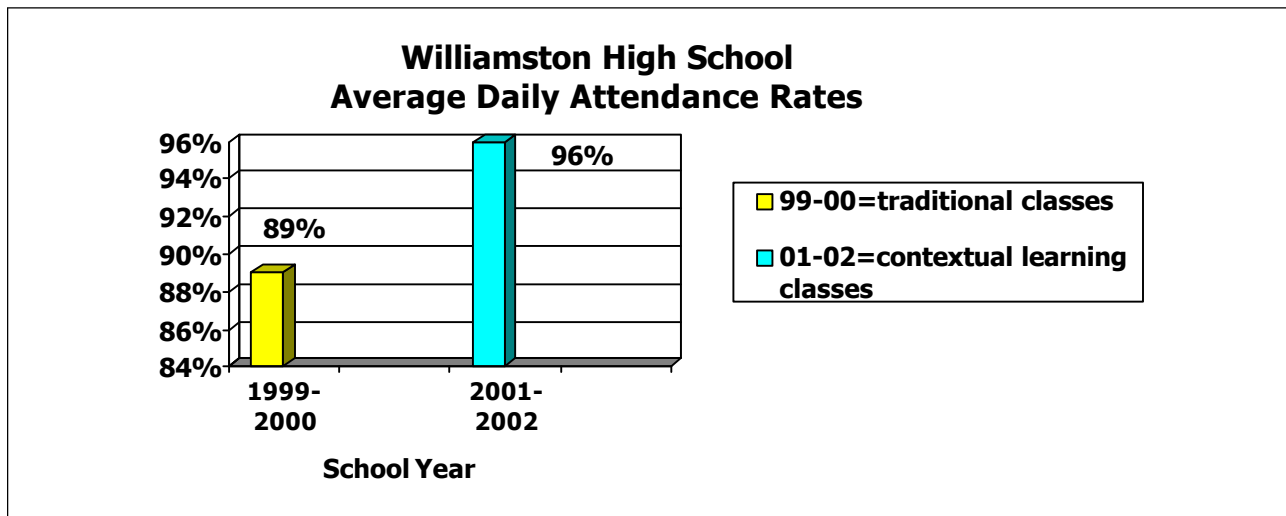


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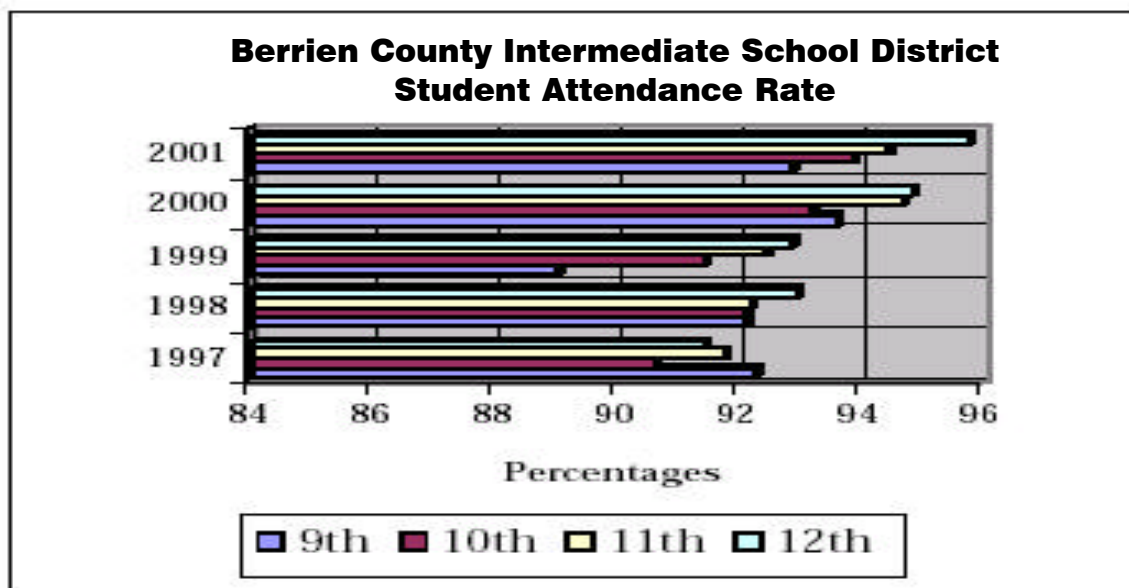


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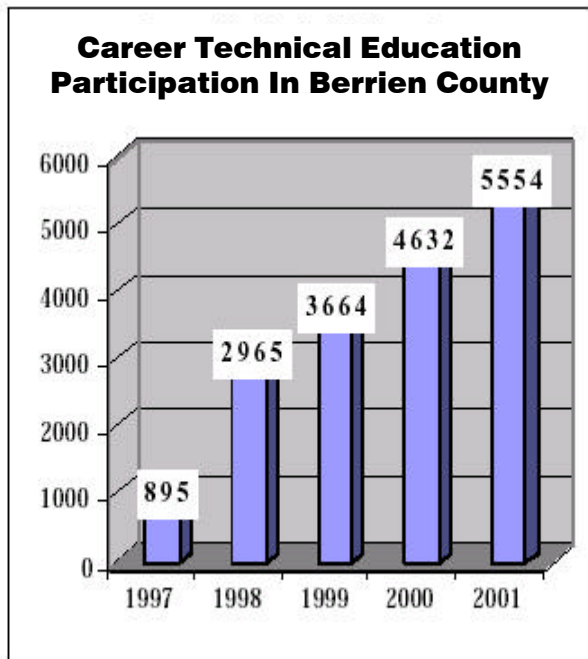


Figure 13:

Career Pathways Applied Learning Experiences In Berrien County

COMPONENT	1997	1998	1999	2000	2001
Work Study	12	80	120	214	176
Job Shadow	75	76	341	622	744
Coop	109	311	509	531	516
Mentor	10	0	3	50	139
Apprentice	5	5	4	25	34
Intern	0	21	67	122	119
Other	0	353	39	153	78
TOTALS	211	846	1083	1717	1806

Figure 14:

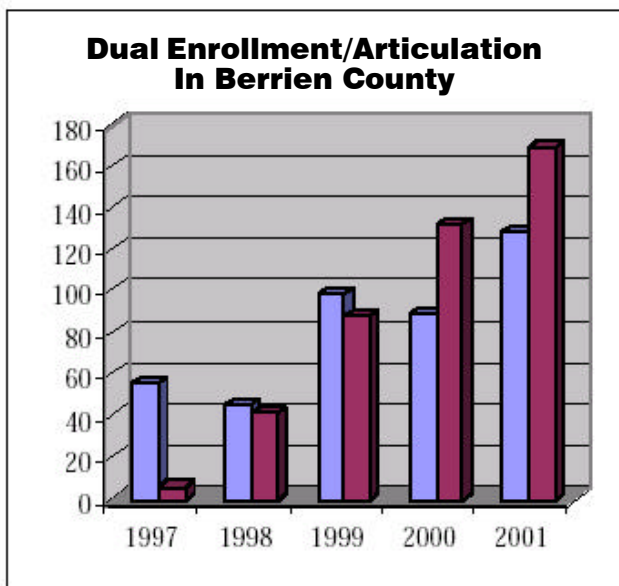


Figure 15:

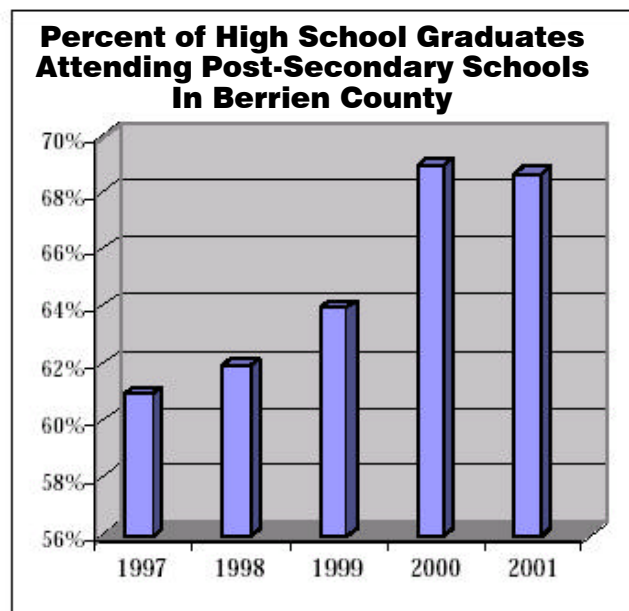
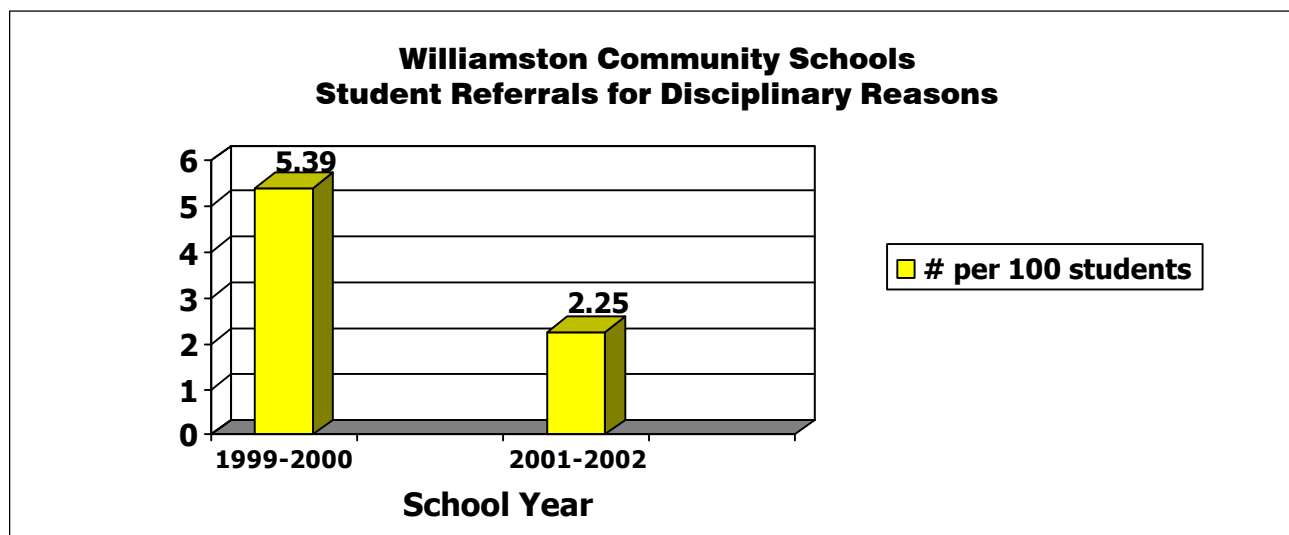


Figure 16:**Figure 17:**

**WILLIAMSTON HIGH SCHOOL SENIOR EXIT SURVEY
CLASS OF 2002**

Survey Questions on High School Experiences	Response (percent)
Expect to attend 4-year (62%) or 2-year college (26%) immediately after high school	88
*Ability to share knowledge and information to influence other people	85
*Confident in ability to achieve future goals	84
*Good personal relationship with WHS faculty and staff	82
Found curriculum academically challenging	78
*Comfortable in ability to work with others from different cultures	78
While at WHS, applied school learning to real world problem outside of school	75
Takes pride in product at WHS that reflects student's originality, high standards, and use of advanced technologies	75
*Positive social experience at Williamston High School	74
*Positive academic experience at Williamston High School	74
Received enough information to make decision about future career	73
Students with career plan after high school	71
*Positive rating of WHS athletics and after school activities	62
*Positive rating of WHS co-curricular activities (PALS, Student Council)	60
Volunteered time to a cause or organization to improve life of others	57
WHS teacher or counselor was most helpful in making a decision about life after high school (parents 24%, friends 18%, others 12%, no response 5%).	40

* Percent represents the sum of "excellent" and "good" ratings.